

What is claimed is:

1. A method for forming a metal silicide layer in a self-aligned manner on a source region, a drain region and a gate electrode of a semiconductor device formed on a semiconductor substrate, said method comprising the steps of:
  - depositing a cobalt film over an entire surface of said semiconductor device formed on said semiconductor substrate,
  - forming said metal silicide layer on said source region, drain region and said gate electrode by performing a heat treating thereof, and
  - etching away an unreacted cobalt film remaining on said semiconductor substrate using an admixture solution made of hydrochloric acid, hydrogen peroxide, and water, having relative concentration ratio thereof ranging from 1:1:5 to 3:1:5, at a solution temperature of 25 to 45°C, with an etching time of 1 to 20 minutes.